Impacts of the Medical Malpractice Slowdown In Los Angeles County: January 1976

JAMES J. JAMES, MD, DRPH

Abstract: The Los Angeles County (California) physician strike of January 1976 resulted in a partial withdrawal of physician services. Among recorded impacts were a $17.5 million loss in hospital revenues and an $8.5 million pay loss for hospital employees. Several surveys revealed no evidence of a significant impact on the general public in finding medical care. Analysis of emergency room visits and paramedical ambulance calls showed no significant increases during the strike. County mortality statistics for the strike were not affected. Eighty-eight fatalities among 2,171 patients transferred during the strike were analyzed; a Case Attributable Mortality Probability generated on 21 cases selected for final review by a five-physician multispecialist panel indicated that 29 per cent of the Attributable Mortality could be ascribed to the strike itself and 71 per cent to ongoing "patient dumping" from private sector to County hospitals. Even if sample attributable mortality rates were generalized to overall county deaths, the resultant figures are below the estimated range of 55 to 153 deaths that did not occur because of the number of elective operations not performed secondary to the strike. Am. J. Public Health 69:437-443, 1979.)

Introduction

On July 1, 1962, physicians in the province of Saskatchewan Canada, opposing a government imposed Medical Care Plan, staged the first physician strike on the North American continent. The preludes, causes, and evolution of this strike have been recorded by Badgley and Wolfe.[1]

Since that time the number of job actions by physicians as well as by other health workers has progressively increased. Surprisingly, little of a descriptive and even less of an analytical nature has been published concerning health workers strikes in general and those of physicians in particular. References two through seventeen represent the bulk of what has been published in the medical literature from the time of the 1962 Saskatchewan physicians' strike through January of 1976, the time of the Los Angeles County (California) physicians' strike, which is the subject of this paper.

The cause of the Los Angeles County strike was the triad of medical malpractice, malpractice liability, and malpractice insurance coverage. This issue has received a great amount of attention, and no attempt will be made here to review and analyze the vast literature addressing it. In California the problem had reached such acute proportions by 1974 that a state legislative committee on medical malpractice was appointed, the first such committee in the United States. For a detailed account of the medical malpractice situation in California, the report of this committee is available.[18]

The principal sources of material available to delineate the events leading up to, occurring, and following the January 1976 strike are the news media in print and broadcast and these sources are reviewed elsewhere.[19] In brief, the beginning and end of the strike were not single point phenomena. Rather, there was a gradual onset and a gradual termination of the strike. However, the major slowdown began on January 1 and by February 1, the return to full work was well under way. Because of this the strike can be considered as spanning the month of January 1976. Unfortunately, the precise degree of physician participation in the strike can only be estimated based upon media reports and a survey of physicians in Los Angeles County which was conducted by the Survey Research Center at the University of California, Los Angeles.[a]

The estimates reported by the media were quite variable, but overall they suggest that approximately 50 per cent of Los Angeles County practicing physicians withheld services to some degree during the course of the strike with the surgical specialties, including anesthesiologists, being the principal participants. The University of California at Los Angeles (UCLA) survey was conducted by telephone between January 25 and February 29, 1976 and involved a probability sample of 499 physicians stratified by specialty. Respondents indicated that approximately 50 per cent had

Address reprint requests to James J. James, MD, DrPH, Armed Forces Staff College, Norfolk, VA 23511. At the time of the study, Dr. James was Resident in General Preventive Medicine, School of Public Health, UCLA. This paper, submitted to the Journal August 3, 1978, was revised and accepted for publication November 6, 1978.

[a]Lewis C and Freeman H: The Opinions and Actions of Physicians During a Malpractice Crisis. Unpublished draft, Survey Research Center, UCLA, January-February, 1976.

already limited services to some extent as a result of the malpractice crisis and that 37.5 per cent planned to permanently restrict their practices in the future as a result of it.

A 50 per cent level of physician participation is generally consistent with that estimated for the degree of physician participation in other strikes as reported in the literature.[1-17] Unfortunately, the spectrum of individual participation levels and participation by specialty remains undefined. Based on the limited data available* it was assumed there was an overall 25 per cent level of physician participation in the strike in terms of non-availability of physician services to the public with surgical services being least available. This is an admittedly arbitrary level.

Regardless of the extent of the physician strike, the principal public health concern is the impact of the strike upon the health of the populace. The primary purpose of this study was to attempt to identify those impacts and measure any impact upon mortality.

Impacts of the Strike

Impacts on the Community in Seeking Care

The Los Angeles Times conducted a survey of a representative sample of 491 heads of household in Los Angeles County.[20] The respondents were equally divided in support of or opposition to the physician action (48 per cent pro and 43 per cent con). Only 10 per cent of the sample (or their families) responded that they had been at all affected by the slowdown. Of those in the overall sample who had some degree of difficulty in finding care, only 7 per cent (0.4 per cent of the whole sample) reported they actually could not receive care.**

A larger survey[b] was conducted by the UCLA Survey Research Center. A series of five questions pertaining to the slowdown were included as part of a general medical survey and an area probability sample of 1,039 households was selected for interviewing.*** It was found that for the period of the medical slowdown: 1) 37.9 per cent of respondents sought care, 62.1 per cent did not; 2) of those who sought care, 15.5 per cent perceived their condition to be extremely urgent, 39.9 per cent urgent, 43.9 per cent not urgent, and 0.8 per cent not sure; and, 3) 74.6 per cent of those who sought care reported no problems finding it with 88.3 per cent receiving care from their usual source and 11.7 per cent from a different source. Of those receiving care, 61.3 per cent felt the service provided was very satisfactory, 32.6 per cent satisfactory, 4.2 per cent not satisfactory, and 1.9 per cent very unsatisfactory.

*see also later findings

**Data on the per cent of the sample seeking care and not having difficulty were not collected.

[b]Roemer MI: Preliminary data collected from a survey of 1,039 households in Los Angeles County, March-April, 1976.

***59 refused the questionnaire

TABLE 1—Monthly Paramedic Runs and Operational Units: Los Angeles County, January 1975 through February 1976

Month	Total Runs	Noncardiac Cases (%)	Cardiac Cases	Operational Units	Runs Per Unit Per Day
Jan. 75	6,929	5,285 (76)	1,644	80	2.79
Feb.	6,095	4,608 (76)	1,487	85	2.56
March	7,588	5,699 (75)	1,889	92	2.66
April	7,494	5,692 (76)	1,802	94	2.66
May	8,707	6,807 (78)	1,900	102	2.75
June	8,808	6,694 (76)	2,114	101	2.91
July	9,410	7,590 (80)	1,820	102	2.97
Aug.	9,051	7,127 (78)	1,924	102	2.86
Sept.	9,705	7,865 (81)	1,840	107	3.02
Oct.	9,275	7,361 (79)	1,914	107	2.80
Nov.	9,922	7,827 (79)	2,095	108	3.06
Dec.	9,819	7,772 (79)	2,047	113	2.80
Jan. 76	10,898	8,436 (77)	2,434	114	3.08
Feb.	9,903	7,702 (77)	2,201	114	2.99

Source: Los Angeles County Department of Health Services

The results of these surveys indicate that, in general, the populace of Los Angeles County had access to their usual care sources. For most of those who did not, possible alternatives included an open emergency room, and a call for a paramedic run.

Impacts on Community Health Facilities

Accessible information on paramedics services utilization dated back to January 1975. Table 1 presents the total number of paramedic runs and cardiac vs noncardiac runs, for the months of January 1975, through February 1976, along with the corresponding number of paramedic units operational for those months. The overall number of paramedic runs does peak for the strike month, and this also holds for the runs, per-unit, per-day data. However, a t test demonstrates no statistical significanace between the January 1976 figure and the mean ($x = 2.83$, $\sigma x = 0.15$ of the others presented ($t = 0.5$). This does not necessarily mean that paramedic runs in Los Angeles did not increase during the physician strike, but it does indicate that any increase was limited. The breakdown of the total runs by cardiac and noncardiac categories does not provide any evidence that there was a shift in the type of calls for paramedic services.

Another alternative for finding health care, if the usual care pattern was not available, would be an emergency room (ER) visit. For most of the slowdown period, *The Los Angeles Times* conducted a survey of 17 major Los Angeles County hospitals, which accounted for approximately one-third of private general care capacity in the area.[20] The 1976 figures were compared to the 1975 figures for the same hospitals by day of the week. It was found that there were approximately 16,000 for the 1976 period, an increase of about 2 per cent.

The Department of Health Services of Los Angeles County provided data on ER visits to county facilities for January of 1975 and 1976. Comparing the total ER visits for the 5th through the 20th of January for both years showed approximately 26,000 visits for 1975 as opposed to about

25,000 for 1976, a decrease of about 4 per cent. It must be stressed that this, along with the figures for the private sector, cannot be construed to signify that patients in need of an alternative health care source did not turn to the ER. A carefully controlled sampling of ER patients for like time periods for 1976 and a series of previous years would be required to test this hypothesis. The data do, however, indicate that there was no significant increase in emergency room untilization over the course of the strike.

Other impacts on the private sector hospitals were: 1) 115 of 234 member-hospitals lost a total of $17.5 million in revenue, and, 2) 30,000 workers lost $8.5 million in pay.[21] As to patient admissions, a total of 43,057 fewer patients were admitted over the slowdown period as compared to the same period in 1975 which amounted to a 28 per cent decrease which seemed directly attributable to the physician strike.[20] Similar comparisons for county facilities are difficult to interpret because of the fact that the county system had more beds available in 1975 (about 3,880) as compared to 1976 (about 3,750). Data obtained from the Department of Health Services showed that the daily census tended to be higher in 1975 except for the period from January 25 through the 31st when the 1976 figures were somewhat higher. However, the range and variations of the daily figures for the month were similar for the two years, and without additional data no conclusions can be drawn.

The Los Angeles Times survey also measured the total number of surgical procedures at the 17-hospital sample for the slowdown period and the same period in 1975.[20] The number of procedures completed over the slowdown was 5,038 which was a decrease of 42 per cent from the 8,586 performed over the same period in 1975. As the sample hospitals represented one-third of the total private care hospital capacity in Los Angeles County at the time, it can be estimated that approximately 10,944 surgical procedures were not performed due to the physician strike. As emergency surgery was not affected by the strike, it can be assumed that these surgical procedures were elective in nature, and as there was no evidence of increased rates for elective surgery at non-affected hospitals (see below) it can be further assumed that these 10,944 operations were, indeed, not performed.

Aggregate surgical mortality has been estimated at 1.4 per cent.[22] This, however, probably represents an upper limit in that it is for aggregate major surgical cases, and the definition as to what is "major" varies widely. Another figure can be derived from congressional estimates of 12,000 deaths per 2.4 million excess operations which works out to an 0.5 per cent overall surgical mortality.[23] Using these two estimates, the projected number of surgical deaths possibly avoided during the physician strike would be between 55 and 153.

The assumption that the decrease in operations was strike-related is stengthened by the experience of the Veterans Administration and the Kaiser Foundation Health Plan. In neither system were the physicians on strike. The Veterans Administration operates several thousand beds in four hospitals throughout the County. Although actual numbers were not made available, the Office of Medical Administration at the Wadsworth VA Hospital stated that over the period of the physician slowdown, there were no marked changes in the number or mix of surgical procedures performed.†

The Kaiser Foundation Health Plan Inc., stated that in Los Angeles County between 1 and 2 per cent of Kaiser inpatient and outpatient services are used by nonmembers and this figure did not change for January 1976. The January 1976 figures for total bed complement, average bed occupancy, and total number of emergency service visits were essentially unchanged from those of January 1975, whereas total membership was increased by 4 per cent over the year.

"Macro" Mortality Impact

Mortality and overall county population data from the Office of Records and Statistics of the LA County Department of Health Services were utilized to compare actual versus expected deaths in LA County for the first seven weeks of 1976. The expected number of deaths was determined through use of a moving average method applied to actual deaths for the same weeks over the preceding five years and the 1976 rates were compared with the mean of the rates for the years 1971-1975 utilizing a t statistic. Finally, weekly mortality figures were examined sequentially for the period 1966 through 1976 to identify consistent trends over time.

Table 2 displays the weekly deaths for the first seven weeks of each year from 1971 through 1976 and includes the number predicted through the moving average along with the standard error as computed by the LA County Office of Records and Statistics. Table 3 displays the actual versus the expected number of deaths for the first seven weeks of 1976 along with the standard error from Table 2 and a determination as to the significance of the difference at one and two standard errors.

The 1976 figures demonstrate a decreasing trend for the number of actual deaths for the second through the sixth weeks. The trend data displayed in Table 4 show the occurrence of eight similar trends since 1966, three of an increasing and four of a decreasing pattern.

Table 5 presents the January death rates per 100,000 and population estimates for LA County from 1971 through 1976 and compares the 1976 rate against the mean rate for the other five years.

Interpretation of the above data is difficult. Statistically significant shifts in the mortality rate over the course of the doctors' strike cannot be shown. However, in a county in which the mortality from a plane crash would not register a significant shift in weekly mortality, any actual mortality effect of the physician strike might not be detectable in an analysis of macro data. This problem is further compounded by the consideration that any increase in deaths attributable to the strike would have to exceed the number of any deaths not occurring because of the strike, and, as noted above, there were likely between 55 and 153 deaths that did not occur as a result of the amount of elective surgery that was not

†Personal communications to the author.

TABLE 2—Weekly Deaths in Los Angeles County First Seven Weeks of 1971-1976

Year	Week Number 1	2	3	4	5	6	7
1971	1241	1906	1454	1426	1377	1028	1092
1972	1320	1357	1378	1616	1258	1324	1400
1973	989	1747	1631	1372	1768	1710	1413
1974	1212	1466	1335	1443	1357	1034	1074
1975	558	1218	1725	1393	944	1325	2027
1976	1472	1470	1382	1208	1193	916	957
Predicted by Moving Average For 1976	1140	1331	1469	1432	1358	1293	1254
Standard Error	157	154	78	99	115	124	104

performed due to the LA County physicians' strike. Finally, however, even if the macro statistics could serve as a sensitive enough indicator for increased mortality secondary to the effect of a given factor, the relationship would remain one of association, and not cause and effect.

"Micro" Mortality Impact

Methodology

The primary goal was to determine, the existence, and the degree, of any attributable mortality, defined as excess mortality due to the effect of a condition subject to prevention or control that was not prevented or controlled due to the Los Angeles County physicians' strike. In order to maximize study efficiency a sample of deaths was sought that was at "high risk" of containing patients who had perceived a need for receiving medical care, had attempted to find that care, and had difficulty receiving care because of the physician strike.

During the strike the County Department of Health Services coordinated incoming calls for patient transfer requests from care facilities that could not render care to those that could do so via the Medical Alert Center (MAC) which was situated at Los Angeles County-UCLA Medical Center. Patients served by MAC seemed to fit the above criteria and might be expected to have a higher mortality experience over the course of the slowdown as compared to that of the general Los Angeles County population.

For the month of January 1976, there were 2,171 patient names recorded in the MAC logbooks. These were cross-matched against the over 12,000 names that comprised the Los Angeles County death lists for January, February, and March, 1976 to identify transfer patients who subsequently died prior to April 1, 1976. Eighty-eight patients whose transfer had been requested and who later died were identified.‡‡

For these 88 deaths, the time of the transfer request, and the times and causes of death as recorded on the County death certificates were presented to a panel of five physicians who were asked to respond yes or no as to whether they felt an initial delay in receiving definitive care might have contributed to the fatal outcome. The five physicians were selected so that the various clinical specialties directly impinging on emergency care would be represented. The pri-

‡‡Inconsistencies in spellings, the use of nicknames and aliases, the presence of unidentified decedents, etc., most likely combined to result in an error of underestimation which could not be quantified but which would tend to understate any attributable mortality found.

TABLE 3—Actual vs Expected Deaths in Los Angeles County for the First Seven Weeks of 1976

Week No. As Of 1/1/76	Actual	Expected	Difference	Standard Error	Significant 1 S.E.	Significant 2 S.E.
1	1472	1140	+332	157	Yes	Yes
2	1470	1331	+139	154	No	No
3	1382	1469	−87	78	Yes	No
4	1208	1432	−224	99	Yes	Yes
5	1193	1358	−166	115	Yes	No
6	916	1293	−377	124	Yes	Yes
7	957	1254	−297	104	Yes	Yes

TABLE 4—Selected Consecutive Weekly Mortality Trends Los Angeles County, 1966-1976

Year	Deaths by Week of the Year							
1976	53	1	2	3	4	5	6	7
(−)	(841)	1472	1470	1382	1208	1193	916	(957)
1975	8	9	10	11	12	13	14	15
(−)	(1247)	1723	1385	1185	1172	1144	1122	(1364)
1972	36	37	38	39	40	41	42	43
(−)	(930)	1273	1162	1152	1110	853	(1232)	
1971-72	50	51	52	1	2	3	4	5
(+)	(1318)	966	1251	1320	1357	1378	1616	(1258)
1971	1	2	3	4	5	6	7	
(−)	(1241)	1906	1454	1426	1377	1028	(1092)	
1967	2	3	4	5	6	7	8	
(−)	(1624)	1742	1524	1360	1261	994	(1052)	
1966-67	50	51	52	1	2	3	4	
(+)	(1089)	766	861	1299	1624	1742	(1524)	
1966	44	45	46	47	48	49	50	
(+)	(1033)	853	955	971	1378	1491	(1089)	
1966	18	19	20	21	22	23	24	
(−)	(1116)	1158	1063	960	892	775	(1246)	

mary intent for judgment of a case was clinical or "professional" as opposed to academic or "expert" judgement. The specialties represented by the physician panel included Neurosurgery, General Surgery, Orthopedics, Internal Medicine and Cardiology.

All those cases with two or more yes responses (out of five) were selected for further investigation. There were 25 such cases. Health records, death certificates, interviews with hospital personnel, coroner's case files, and ambulance dispatch reports were all utilized, and the resultant data were collated to form case histories for presentation to the physician panel. For the evaluation of the final 25 cases a quantitative measure of attributable mortality was generated.

Each physician evaluator was instructed to consider that each individual case represted 100 similar cases and to then give his professional estimate as to how many might have survived (defined in this study as being discharged alive from the health facility following the episode under consideration) if definitive care had been rendered initially and the given delay in receiving definitive care had not occurred. The physicians could also respond either "not enough information to make a valid determination," or "unable to make a valid determination for this case." Individual physician responses were then weighted by specialty for cause of death (e.g. neurosurgeon determination for head injury cases), and the weighted responses were averaged to yield a case attributable mortality probability (CAMP)*. The overall attributable mortality measure was generated by summing the individual CAMPs. An attempt was also made to determine if the physician strike was in reality the reason for requesting that the patient be transferred, but because of reluctance on the part of the transferring facilities to discuss individual cases, this particular question could not be answered.

TABLE 5—January Mortality Rates for Los Angeles County, 1976 vs 1971-1975

Year	Population	January Deaths per 100,000
1971	7,067,446	85
1972	7,090,452	80
1973	7,098,826	81
1974	7,000,679	78
1975	7,992,299	70
1971-1975		$\bar{x} = 78.8^*, \sigma_{\bar{x}} = 4.96$
1976	7,992,299	79*

*Difference not statistically significant by t test

Findings

Table 6 based on data collected from the MAC logbooks displays the total daily runs summarized into daily averages per month for June 1975 through November 1975 and for January 1976. The January 1976 figure is 41 per cent above the six-month mean.

Of the 88 deaths first identified, there were 47 males and 41 females. Ages ranged from 18 years through 93 with six under 30, 34 between 30 and 60, and 44 over 60. The elapsed times between initial transfer and time of death ranged from 27 minutes to 53 days with a fairly even distribution except

*Case Attributable Mortality Probability (CAMP) determination. Each physician panel member was asked to determine for each case what proportion of similar cases could be expected to survive if the experienced delay had not occurred. The responses were weighted as a factor of 10 by specialty for each case through consultation between the author and panel members. The determination for case one, Table 7, is illustrated:

	ORTHO.	NEURO SURG.	CARD.	GEN. SURG.	INT. MED
Response	NRG**	.75	.80	.80	NRG**
Weight (Sum=10)	1	1	2	5	1

$$\text{CAMP} = \frac{(1X.75) + (2X.8) + (5X.8)}{8} = .79$$

**NRG = No Response Given

TABLE 6—Patient Transfer Requests, LAC-USC Medical Center, June-November* 1975 vs January 1976

Month	Total Requests	Average Daily Requests
June 1975	1424	47.5
July 1975	1522	49.1
August 1975	1519	49.0
September 1975	1545	51.5
October 1975	1615	52.1
November 1975	1493	49.8
Mean	1544**	49.8
Standard Deviation		1.56
January 1976	2171	70.0
January Increase	627 (41% increase) (29% of January transfers)	
t = 14.2 Significance: yes, at .995		

*December figures are excluded because some withholding of physician services was in effect during the latter part of the month

**Predicted requests for January 1976 (31 days × 49.8 daily average)

for a clumping of 19 cases with elapsed times of less than 24 hours. Diagnostic entries included five cases of upper gastrointestinal hemmorrhage, eight trauma cases with six involving head trauma, 40 acute cardiovascular events, 34 other medical conditions predominantly pneumonia or cancer, and one suicide by hanging.

Among the 25 cases selected for more complete evaluation, the age distribution tended to be younger; all six of the original 88 cases under 30 years of age were retained.

Of the 25 retained cases, one could not be evaluated because of inadequate data and in three others there was no measurable delay in receiving definitive care. This left 21 cases upon which the case attributable mortality probability (CAMP) could be determined. Table 7 lists the final 21 cases along with the primary diagnosis as determined at the facility to which the patient was transferred, the time delay in receiving definitive care occasioned by the transfer, and the CAMP as determined by the physician panel.

The ambulance response time (time elapsed from receipt of transfer request to time ambulance picked up the patient) was found to range between 1/4 hr and 3 hrs with a mean response time of 1 1/4 hrs. Twenty per cent of the transfer calls were placed between midnight and 8 am, and 40 per cent between both 8 am to 4 pm and 4 pm to midnight. Eighteen different community hospitals transferred 23 patients to one community and two county facilities with two patients going from one to another county facility.

Interpretation

Although statistically the January figure for MAC transfer requests is significantly increased, the base line data are not extensive enough over time to evaluate the effect of possible seasonal and other time-trend variations. No data were available to indicate to what extent, numerically and/or qualitatively, the transfers related to the total segment of the Los Angeles County population having difficulty finding care.

The sum of the CAMPs (1.86) implies that 1.86 of 21 deaths (9 per cent) were preventable based on the determinations of the physician panel. Applying this against 29 per cent of January transfer requests** results in an estimate of 2.6 per cent (.09 × .29) as the portion of the overall mortality studied herein that can be attributed to the strike. This 2.6 per cent of 21 deaths represents 0.55 deaths per 21 deaths for the final sample and per 88 for the initial sample. Applying these rates to the total number of Los Angeles County deaths for the first four weeks of January 1976 (5,532 from Table 1) yields a mortality impact of between 31.4 deaths for the lower rate, and 131.5 deaths for the higher rate as possibly being due to the physician strike.** This very closely approximates the 55 to 153 deaths estimated to have not occurred as a result of the decrease in the number of surgeries performed during and because of the physician strike.

One other aspect of the analysis of transfer data deserves comment. Regardless of the strike, a certain number of cases are normally transferred when they should not be, and as a result some otherwise preventable deaths occur. In fact, the existence of such a condition has been described by Roemer and other investigators, and has been termed "patient-dumping" (24-26). The findings of the present study further corroborate the existence of such a problem.

Summary and Discussion

The Los Angeles County physicians' strike lasted for approximately one month. Although the precise degree of physician participation in the strike could not be measured, available data support a figure of 25 per cent as a conservative estimate. This resulted in $17.5 and $8.5 million

**Estimated percentage of January 1976 patient transfers attributed to the strike from Table 6.

***This extrapolation is not intended to imply that the sample attributable mortality rates actually reflect those for LA County as a whole but rather is intended to give some feel for the potential overall mortality impact of the strike based on the findings of this study.

TABLE 7—Case Attributable Mortality Determinations

Case No.	Primary Diagnosis	Time Delay	CAMP
1	Stab Wound Chest	2 hrs	.79
2	Head Trauma	4 hrs	.55
3	GSW[a], Head and Chest	2 1/2 hrs	0
4	Head Trauma	2 1/2 hrs	.03
5	G.I.[b] Hemorrhage	2 hrs	.06
6	Cirrhosis	3/4 hrs	0
7	Pneumonia	1 1/4 hrs	0
8	Head Trauma	3 1/2 hrs	.01
9	Head Trauma	1 1/2 hrs	.01
10	Carcinoma	3 3/4 hrs	0
11	Head Trauma	2 hrs	.03
12	Head Trauma	1 1/4 hrs	.04
13	CVA[c]	4 3/4 hrs	.04
14	Head Trauma	1 1/2 hrs	.08
15	Pneumonia	2 1/2 hrs	.05
16	Aortic Aneurysm	1 hr	.05
17	Multiple Trauma	1 3/4 hrs	.11
18	G.I. Hemorrhage	2 1/2 hrs	0
19	CHF[d]	2 hrs	.01
20	GSW[a], Head	1 1/4 hrs	0
21	Renal Disease	1/2 hr	0
	Sum of CAMPs = 1.86		

a) GSW = Gunshot Wound
b) GI = Gastrointestinal
c) CVA = Cerebrovascular Accident
d) CHF = Congestive Heart Failure

losses to affected hospitals and their employees respectively. Specific health impacts could not be as well defined. Available data indicated a decrease of 28 per cent for hospital admissions and 42 per cent for surgical procedures as compared to a similar period one year earlier. Analyses of population surveys, paramedic ambulance runs, and emergency room visits did not indicate that the populace of Los Angeles County perceived or experienced any real difficulty in either receiving medical care or receiving it from their usual care sources.

An analysis of "macro" or population mortality figures for Los Angeles County showed no significant change for the strike and non-strike periods.

A "micro" or individual case analysis was conducted on a series of patient transfers to identify and measure any attributable mortality that might have resulted from the MD strike. It was found that there was an overall increase of 41 per cent in patient transfers during the strike and that an estimated 9 per cent of the overall mortality experience for the series studied might have been preventable had definitive care been initially rendered. The portion of this preventable mortality that could be attributed to the physicians' strike was estimated to be 29 per cent. This indicated that some other factor or factors such as patient dumping also contributed to the measured attributable mortality.

Overall, the study findings support the conclusion that the physicians' strike had a marked financial impact on involved hospitals. Collectively, however, the remaining data cannot support a conclusion that the strike significantly impacted on the health status and/or mortality experience of the County population. They do indicate that if there were such impacts, they were very small. Finally, this conclusion, coupled with the estimated number of operative deaths that did not occur as a direct consequence of the strike, suggests that, on balance, the Los Angeles County physicians' strike of January 1976 was responsible for more deaths prevented than lives lost. The data collected did not attempt to measure the personal stress or hardship and lost earnings of patients incident to the postponement of elective operations occasioned by the strike.

REFERENCES

1. Badgley R and Wolfe S: Doctor's Strike. New York: Atherton Press, 1967.
2. Editorial. Crisis in state medicine abroad, Canadian Medical Association Journal, 92:844, 1965.
3. Schwartz H: The public will not tolerate disruptive strikes, Hospitals, 49:43-46, 1975.
4. Wolfe S: Worker conflicts in the health field: An overview, International Journal of Health Services, 5:5-8, 1975.
5. Badgley R: Health worker strikes, International Journal of Health Services, 5:9-17, 1975.
6. Davis LJ and Foner M: Organization and unionization of health workers in the United States, International Journal of Health Services, 5:19-26, 1975.
7. Match RK, Goldstein AH and Light HL: Unionization, strikes, threatened strikes, and hopitals, International Journal of Health Services, 5:27-36, 1975.
8. Marcus S: The purposes of unionization in the medical profession, International Journal of Health Services, 5:37-42, 1975.
9. Ehrenreich B and Ehrenreich JH: Hospital workers: Class conflicts in the making, International Journal of Health Services, 5:43-51, 1975.
10. Belmar R and Sidel VW: An international perspective on strikes and strike threats by physicians: The case of Chile, International Journal of Health Services, 5:53-64, 1975.
11. Bellin LE: The Nursing Home Strike: November 5-12, 1973, Mortality in Seven Struck Free-Standing Nursing Homes. New York City: Department of Health, 1976.
12. How Doctors Feel About Strikes, American Medical News, Chicago, February 23, 1976.
13. Appelbaum A: The meaning of the New York strike, Hospitals, 49:17A-17D, 1975.
14. McNamara JJ and Greene M: An evaluation of emergency room services during the New York City house officer strike, Am Public Health, 66:135-138, 1976.
15. Gonzalez A: Behind the British housestaff strike, Hospital Physician, 12:32-34, 1976.
16. Housestaffs End Strike in Los Angeles, American Medical News, Chicago, May, 1976.
17. Maddox, D: Doctors' Slowdown, Modern Healthcare, 5:41-50.
18. Select Committee on Medical Malpractice of the California Assembly, 1974. Medical Malpractice-Preliminary Report. Sacramento, California, 1974.
19. James J: The Mortality Impact of the Medical Malpractice Slowdown in Los Angeles County, January 1976. Doctoral Thesis, UCLA School of Public Health, California, 1976.
20. Times Survey, The Los Angeles Times, January-February 1976.
21. Editor's Note: American Medical News, February 16, 1976.
22. Bunker J and Wennberg J: Operation rates, mortality statistics, and the quality of life, N Engl J Med, 289:1249-1251, 1973.
23. Frederick L: How Much Unnecessary Surgery? Medical World News, May 3, 1976, 50-65.
24. Roemer MI and Mera JA: Patient-dumping and other voluntary agency contributions to public agency problems, Medical Care, 11:30-39, 1973.
25. De Vise P: Cook County hospital: Bulwark of Chicago's apartheid health system, The New Physician, 20:394-398, 1971.
26. Alden S: The other dumping syndrome, Hospital Physician, 5:6- 8, 1976.